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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/647,516	KOJIMA, HIDEAKI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Steven S. Paik	2876	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**  
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed August 14, 2006.
2. ☒ The allowed claim(s) is/are 1,3,5-11,13 and 15-22.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application</li> <li>6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date <u>9/20/06</u> .</li> <li>7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
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**DETAILED ACTION**

***Response to Amendment***

1. Receipt is acknowledged of the Amendment filed August 14, 2006.

**EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Christophe F. Lair (Reg. No. 54,248) on September 20, 2006.

The application has been amended as follows:

**IN THE CLAIMS:**

Re claim 1, change "process" with -- processor -- in line 17.

Re claim 3, change "process" with -- processor -- in line 17.

Re claim 11, change "process" with -- executing -- in line 14 and "processor" with -- executing" in line 19.

Re claim 13, change "process" with -- executing -- in line 14.

1. (Currently Amended) A card processing system using an IC card having an electrical contact and an IC card antenna, the IC card capable of exchanging information through the electrical contact with an on-board unit installed in a vehicle using a toll road, and

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capable of wireless communication with an antenna unit installed at a roadside of the toll road through the IC card antenna, the card processing system comprising:

a first processor configured to execute at an entrance of the toll road an electronic toll collection process through the wireless communication between the antenna unit installed at the roadside and the on-board unit into which the IC card is inserted to electrically connect the electrical contact of the IC card with the on-board unit;

a second processor configured to execute at the entrance of the toll road a non-contact IC card process through the wireless communication between the antenna unit installed at the roadside and the IC card through the IC card antenna when an error is generated in the electronic toll collection process by the first processor;

comparison/collation means for comparing and collating the peculiar information that are stored in the on-board unit and the IC card, respectively, when the IC card storing entrance information of the toll road is inserted in the on-board unit subsequent to the non-contact IC card process executed by the second ~~process~~ processor; and

means for storing the entrance information stored in the IC card as a result of the non-contact IC card process executed by the second processor in the on-board unit when peculiar information stored in the on-board unit and the IC card unit are matched to each other by the comparison/collation means.

2. (Cancelled).

3. (Currently Amended) A card processing system using an IC card having an electrical contact and an IC card antenna, the IC card capable of exchanging information through the electrical contact with an on-board unit installed in a vehicle using a toll road,

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and capable of wireless communication with an antenna unit installed at a roadside of the toll road through the IC card antenna, the card processing system comprising:

a first processor configured to execute at an exit of the toll road, an electronic toll collection process through the wireless communication between the antenna unit installed at the roadside and the on-board unit into which the IC card is inserted to electrically connect the electrical contact of the IC card with the on-board unit; and

a second processor configured to execute at the exit of the toll road a non-contact IC card process through the wireless communication between the antenna unit installed at the roadside and the IC card through the IC card antenna when an error is generated in the electronic toll collection process by the first processor, and

comparison/collation means for comparing and collating the peculiar information of the on-board unit stored in the on-board unit and the IC card, respectively when the IC card is inserted into the on-board unit subsequent to the non-contact IC card process executed by the second ~~process~~ processor.

4. (Cancelled).

5. (Previously Amended) The card processing system according to claim 1, further comprising:

a comparison/collation means for comparing and collating the on-board unit peculiar information and entrance information that should have been stored in the on-board unit and the IC card, respectively when the IC card storing the entrance information obtained by the on-board unit in the entrance processing at the entrance by the first processor is pulled out of the on-board unit and inserted into the on-board unit again; and

means for storing a possibility of illegality in at least either one of the IC card and the on-board unit when at least either one of the on-board unit peculiar information and the entrance information is detected as being mismatch.

6. (Previously Presented) The card processing system according to claim 3, wherein the second processor includes judging means for judging the exit process is possible by collating the information obtained from the IC card through the wireless communication with the IC card and the information obtained from the on-board unit before the exit process that is executed by the first processor is abnormally finished, and an exit processor to execute the exit process by determining a vehicle class from the information obtained from the IC card, further comprising:

means for storing information of the result of the exit process by the exit processor and the abnormally finished history information in the exit process by the first processor.

7. (Previously Presented) The card processing system according to claim 1, further comprising:

notifying means for notifying that the IC card is not inserted in the on-board unit to a user of the IC card when peculiar information of the on-board unit was obtained by the first processor that is executed at the entrance of the toll road but the individual information of the IC card was not obtained;

comparison/collation means for comparing and collating the peculiar information of the on-board unit stored in the on-board unit and the IC card when the IC card is inserted into the on-board unit; and

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warning means for warning the possibility of illegality for use of IC cards or on-board units.

8. (Previously Amended) The card processing system according to claim 3, further comprising:

notifying means for notifying a user of the IC card that the IC card was not inserted in the on-board unit when peculiar information of the on-board unit was obtained by the first processor that is executed at the exit of the toll road but the peculiar information of the IC card could not be obtained; and

warning means for warning a possibility of illegality for use of IC cards or onboard units when the on-board unit peculiar information are detected as being mismatched as a result of the comparison by the comparison/collation means.

9. (Previously Amended) The card processing system according to claim 1, wherein the second processor is executed through the wireless communication with the IC card pulled out of the on-board unit and further comprising:

detecting means for detecting that the IC card is inserted into the on-board unit; means for storing peculiar information of the on-board unit stored in the onboard unit in the IC card and individual card information stored in the IC card in the on-board unit when the detecting means detects that the IC card is inserted in the onboard unit; and

warning means for warning possibility of illegality when the peculiar information of both the on-board units are detected as being mismatched as a result of the collation by the comparison/collation means.

10. (Previously Presented) The card processing system according to claim 1,

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further comprising:

detecting means for detecting a contact defect by the communication through the electrical contact provided in the IC card;

reading means for reading out the information stored in the IC card through an antenna provided in the IC card by the second processor when the contact defect is detected by the detecting means;

means for sending the IC card information read by the reading means to an upper rank host computer for enquiry; and

means for writing the IC card information in a separate new IC card and reissuing this IC card when the match is answered by the upper rank host computer in response to the enquiry made for the IC card.

11. (Currently Amended) A card processing method using an IC card having an electrical contact and an IC card antenna, the IC card capable of exchanging information through the electrical contact with an on-board unit installed in a vehicle using a toll road, and capable of wireless communication with an antenna unit installed at a roadside of the toll road through the IC card antenna, the method comprising:

first executing at an entrance of the toll road an electronic toll collection process through the wireless communication between the antenna unit installed at the roadside and the onboard unit into which the IC card is inserted to electrically connect the electrical contact of the IC card with the on-board unit;

second executing at the entrance of the toll road a non-contact IC card process through the wireless communication between the antenna unit installed at the roadside and

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the IC card through the IC card antenna when an error is generated during the electronic toll collection process in the first executing;

subsequent to the non-contact IC card process executed by the second ~~process~~ executing, comparing and collating peculiar information stored in the on-board unit and the IC card, respectively, when the IC card storing entrance information of the toll road is inserted into the on-board unit; and

storing the entrance information stored in the IC card as a result of the non-contact IC card process executed by the second ~~processor~~ executing in the on-board unit when the on-board unit peculiar information are matched to each other in the comparing and collating step.

12. (Cancelled).

13. (Currently Amended) A card processing method using an IC card having an electrical contact and an IC card antenna, the IC card capable of exchanging information through the electrical contact with an on-board unit installed in a vehicle using a toll road, and through a capable wireless communication with an antenna unit installed at a roadside of the toll road through the IC card antenna, the method comprising:

first executing at an exit of the toll road, an electronic toll collection process through the wireless communication between the antenna unit installed at the roadside and the on-board unit into which the IC card is inserted to electrically connect the electrical contact of the IC card with the on-board unit; and

second executing at the exit of the toll road a non-contact IC card process through the wireless communication between the antenna unit installed at the roadside and the IC card

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through the IC card antenna when an error is generated during the electronic toll collection process in the first executing, and

subsequent to the non-contact IC card process executed by the second ~~process~~ executing, comparing and collating peculiar information of the on-board unit stored in the on-board unit and the IC card, respectively when the IC card is inserted into the on-board unit.

14. (Cancelled).

15. (Previously Presented) The card processing method according to claim 11, further comprising:

comparing and collating on-board unit peculiar information and entrance information that should be stored in the on-board unit and the IC card, respectively, when the IC card storing the entrance information obtained by the on-board unit in an entrance process of the first executing step performed at the entrance is pulled out of and inserted again into the on-board unit again; and

storing a possibility of illegality in at least one of the IC card and the on-board unit when at least either one of the on-board unit peculiar information and the entrance information is mismatched in the comparing and collating step.

16. (Previously Presented) The card processing method according to claim 13, wherein the second executing step includes judging whether the exit process can be executable by collating the information obtained from the IC card through the wireless communication with the second executing and the information obtained from the on-board unit before the exit process executed in the first executing step is abnormally finished and the exit processing step to execute

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the exit process by determining a vehicle class from the information obtained from the IC card when the exit process is judged executable in the judging step, further comprising:

storing the information of the exit processing result in the exit processing step and the history information of the abnormally finished exit process in the first executing step in the IC card.

17. (Previously Presented) The card processing method according to claim 11, further comprising:

informing a user of the IC card that the IC card was not inserted into the onboard unit when peculiar information of the on-board unit was obtained but individual information of the IC card could not be obtained in the first executing step performed at the entrance of the toll road;

comparing and collating on-board unit peculiar information stored in the onboard unit and the IC card, respectively when the IC card is inserted into the on-board unit; and

warning a possibility of illegality for use of the IC card or on-board unit when the peculiar information of the on-board units are detected as being mismatched as a result of the collation in the comparing and collating step.

18. (Previously Presented) The card processing method according to claim 13, further comprising:

informing a user of the IC card that no card is inserted into the on-board unit when peculiar information of the on-board unit was obtained but individual information of the IC card could not be obtained in the first executing step performed at the exit of the toll road;

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comparing and collating the on-board unit peculiar information stored in the on-board unit and the IC card, respectively when the IC card is inserted-into the onboard unit; and

warning a possibility of illegality of use of the IC card or on-board unit when peculiar information of the on-board units are detected as being mismatched as a result of the collation in the comparing and collating step.

19. (Previously Amended) The card processing method according to claim 11, wherein the second executing step is performed through the wireless communication with the IC card pulled out of the on-board unit, further comprising:

detecting that the IC card is inserted into the on-board unit;

storing on-board unit peculiar information stored in the on-board unit in the IC card and storing individual card information stored in the IC card in the on-board unit;

warning a possibility of illegality when the peculiar information of the onboard units are detected as being mismatched as a result of the collation in the comparing and collating step.

20. (Previously Presented) The card processing method according to claim 11, further comprising:

detecting a defective contact through the communication with the electric contact provided in the IC card;

reading out information stored in the IC card through an antenna provided in the IC card according to the second executing step when the defect of the contact is detected by the detecting step;

requesting an enquiry by sending the IC card information read in the reading step to an upper rank host computer; and

writing the IC card information in a separate new IC card and reissuing this IC card when the match is answered by the upper rank host computer in response to the enquiry made for the IC card in the requesting step.

21. (Previously Presented) The card processing system according to claim 1, further comprising a device configured to inform a user of the IC card when the error is generated in the electronic toll collection process by the first processor.

22. (Previously Presented) The card processing system according to claim 21, wherein the device is a display.

***Allowable Subject Matter***

3. Claims 1,3, 5-11,13 and 15-22 are allowed.

The following is an examiner's statement of reasons for allowance: none of the cited prior arts (Isobe et al.(US 6,019,285); Harrell (US 6,609,655)) of the record, taken alone or in combination discloses, teaches, or fairly suggests the claimed card processing system and method comprising, among other things, using an IC card having an electrical contact and an IC card antenna, the IC card capable of exchanging information through the electrical contact with an on-board unit installed in a vehicle using a toll road, and capable of wireless communication with an antenna unit installed roadside of the toll road through the IC card antenna. The card processing system and method further comprising means for storing the entrance information stored in the IC card as a result of the non-contact IC card process executed by the second processor in the on-board unit when peculiar information stored in the

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on-board unit and the IC card unit are matched to each other by the comparison/collation means (claims 1 and 11), and comparison/collation means for comparing and collating the peculiar information that are stored in the on-board unit and the IC card, respectively, when the IC card storing entrance information of the toll road is inserted in the on-board unit subsequent to the non-contact IC card process executed by a second processor/executing (claims 3 and 13). After further search and thorough examination of the present application and in view of the Applicant's arguments and amendments, claims 1, 3, 5-11, 13 and 15-22 are found to be in condition for allowance over the prior art made of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven S. Paik whose telephone number is 571-272-2404. The examiner can normally be reached on Monday - Friday 5:30a-2:00p (Maxi-Flex\*).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Steven S. Paik  
Primary Examiner  
Art Unit 2876

ssp